

1        5. The Hill connector (4) allows the pumping chamber to be defined by the bottom of  
2        the surface of Hill's weighted-ballasted piston (8), Hill cylinder walls (7) and enclosed  
3        bottom of cylinder (13).

4        6. The Hill connector (4) allows a pump stroke that is limited only by the length of the  
5        Hill cylinder (7) thereby being able to create a pumping chamber of any length  
6        required, without concern over the connector (4) or it's attachments, as is a necessary  
7        concern in the Anderson and Villanueva connector

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### **CLAIMS**

10       45.( new) A wave and tide actuated submersible pump for use in an open body of water,  
11       said wave and tide actuated submersible pump comprising a pump cylinder (7) having an  
12       open top end and a closed bottom end (13), said cylinder (7) is affixed to a structure located  
13       in an open body of water, connected to openings in the pump cylinder (7) near the closed  
14       bottom end (13), allow for the intake of water from the body of water by check valve means  
15       (11) and controlling the outflow of water from the pump by check valve means (12) to a  
16       remote location, a ballasted weighted piston (8) vertically reciprocally movable within the  
17       pump cylinder (7) and forming a pump chamber defined by said cylinder (7), said ballast  
18       weighted piston (8) and said lower closed bottom end (13), a buoy (1) connected to the  
19       ballast weighted piston (8) by a connector (4) for driving the ballast weighted piston (8) on  
20       an upward stroke in response to wave action, said ballast weighted piston (8) being driven in  
21       a downward stroke under force of gravity, a means for confining the upward stroke of the

1 ballast weighted piston (8) within the cylinder (7) and being attached to the top of the  
2 ballast weighted piston (8) at a first end and to a lifting eye of the buoy (1) at a second end.

3 46. (new) The wave actuated submersible pump of claim 45 wherein said means for  
4 restricting the upward stroke of the weighted piston is a plurality of stop pins (6) which are  
5 securely attached and pass through openings adjacent said open top end of the pump  
6 cylinder (7).

7 47. (new) The wave actuated submersible pump of claim 45 wherein said lower plate (15)  
8 is a bottom plate end is suitable for imbedding the pump cylinder in the floor of the open  
9 body of water.

10 48. (new) The wave actuated submersible pump of claim 45 wherein said lower plate (13)  
11 enclosed end is a bottom flange plate for securing the pump cylinder to submerged  
12 foundations at the floor of the open body of water.

13 49. (new) The wave actuated submersible pump of claim 45 wherein said ballast  
14 weighted piston (8) includes sealing rings to provide a seal against the pump cylinder (7).

15 50. (new) The wave actuated submersible pump of claim 45 wherein said buoy (1)  
16 includes a mooring eye (3) used to stabilize the direction of travel of the buoy (1).

17 51. (new) The wave actuated submersible pump of claim 45 wherein a mooring guide  
18 and wear ring (5) mounted to the top open end of the pump cylinder (7), said connector (4)  
19 passing through the top of said cylinder said mooring guide and wear ring (5) and being

1 attached to the top of the ballast weighted piston (8) at a first end and to a lifting eye (2) of  
2 the buoy (1) at a second end.

3 52. (new) The wave actuated submersible pump of claim 45 wherein said ballast weighted  
4 piston (8) includes an air vent passageway (18), a check valve ball (19) and an air vent  
5 chamber (34) for allowing air entrapped within the pump chamber to vent through the air  
6 vent passageway and out the open top of the pump cylinder (7).

7 53. (new) The wave actuated submersible pump of claim 45 wherein the water pumped  
8 by the submersible pump is delivered by outlet check valve means (12) to a hydro-electric  
9 power plant (45).

10 54. (new) The wave actuated submersible pump of claim 45 wherein the water pumped  
11 by the submersible pump is delivered by outlet check valve means (12) to pump  
12 contaminated fluid into evaporation ponds or large bodies of water for mineral and  
13 chemical extraction, refinement (41) and toxic waste removal from contaminated fluids (39).

14 55. ((new) The wave actuated submersible pump of claim 45 wherein the water pumped  
15 by the submersible pump is delivered by outlet check valve means (12) to pump salt water,  
16 creating large bodies of water and seas for the evaporation of said water thus forming  
17 moisture laden clouds where prevailing winds will blow these clouds to natural and man  
18 made barriers (50) causing rain to fall, creating new pasture and farmland (49) whilst  
19 moderating the earth's climate (51); said additional moisture will cleanse the atmosphere and  
20 the whole cycle shall act as a radiator cooling the earth.

1        56. (new) The wave actuated submersible pump of claim 45 wherein the water pumped  
2 by the submersible pump is delivered by outlet check valve means (12) to desalinate water  
3 (47) using pumps as a source of energy to extract fresh water from the saltwater.

4        57. (new) The wave actuated submersible pump of claim 45 wherein the water pumped  
5 by the submersible pump is delivered by outlet check valve means (12) to a levied reservoir  
6 to raise sea animals and organisms for the harvesting of said sea animals and organisms (43).

7        58. (new) The wave actuated submersible pump of claim 45 wherein the water pumped  
8 by the submersible pump is delivered outside a levied area by outlet check valve means (12)  
9 to claim land from the sea by using these pumps with their suctions within the levied areas,  
10 to pump water out of said levied area (42).

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**ENDNOTE**

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**PROPOSED**

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**EXAMINER'S AMENDMENT**

15        An examiner's amendment to the record appears below. Should the  
16 changes and/or additions be unacceptable to applicant, an amendment may  
17 be filed as provided by 37 CFR 1.312. To ensure consideration of such an  
18 amendment, it **MUST** be submitted no later than the payment of the issue  
19 fee.

1           Authorization for this examiner's amendment was given in a  
2 telephone interview with Richard Hill on January 18, 2007.

3           The application has been amended as follows:

4           Claims 22-44 are canceled.

5           New claims 45- are added below:

6 --       45.( new) A wave actuated submersible pump for use in an open body  
7 of water, said wave actuated submersible pump comprising,  
8       a pump cylinder having an open top end and a bottom end, the bottom  
9 end attached to a lower plate for securing said pump to the floor of the open  
10 body of water,  
11       an inlet check valve and an outlet check valve connected to openings  
12 in the pump cylinder near the lower plate, said inlet check valve allowing for  
13 the intake of water from the body of water and said outlet check valve  
14 controlling the flow of water from the pump to a remote location,  
15       a weighted piston vertically reciprocally movable within the pump  
16 cylinder and forming a pump chamber defined by said cylinder, said  
17 weighted piston and said lower plate,  
18       a buoy connected to the weighted piston by a flexible connector for  
19 driving the weighted piston on an upward stroke in response to wave action,

1    said weighted piston being driven in a downward stroke under force of  
2    gravity,  
3        a means for restricting the upward stroke of the weighted piston  
4    mounted adjacent to the open top end of the pump cylinder,  
5        a mooring guide and wear ring mounted to the top open end of the  
6    pump cylinder, said flexible connector passing through said mooring guide  
7    and wear ring and being attached to the top of the weighted piston at a first  
8    end and to a lifting eye of the buoy at a second end, and  
9        said weighted piston including an air vent passageway, a check valve  
10   ball and an air vent chamber for allowing air entrapped within the pump  
11   chamber to vent through the air vent passageway and out the open top of the  
12   pump cylinder.

13        46 .(new) The wave actuated submersible pump of claim 45 wherein  
14   said flexible connector is a chain.

15        47. (new) The wave actuated submersible pump of claim 45 wherein  
16   said flexible connector is a cable.

17        48. (new) The wave actuated submersible pump of claim 45 wherein  
18   said means for restricting the upward stroke of the weighted piston is a

1 plurality of stop pins which are securely attached and pass through openings  
2 adjacent said open top end of the pump cylinder.

3 49. (new) The wave actuated submersible pump of claim 45 wherein  
4 said lower plate is a bottom plate suitable for imbedding the pump cylinder  
5 in the floor of the open body of water.

6 50. (new) The wave actuated submersible pump of claim 45 wherein  
7 said lower plate is a bottom flange plate for securing the pump cylinder to  
8 submerged foundations at the floor of the open body of water.

9 51. (new) The wave actuated submersible pump of claim 45 wherein  
10 said weighted piston includes sealing rings to provide a seal against the  
11 pump cylinder.

12 52. (new) The wave actuated submersible pump of claim 45 wherein  
13 said buoy includes a mooring eye used to stabilize the direction of travel of  
14 the buoy.

15 53. (new) The wave actuated submersible pump of claim 45 wherein  
16 the water pumped by the submersible pump is delivered from the outlet  
17 check valve to a hydro-electric power plant including a reservoir which  
18 stores the pumped water and then delivers it to hydro-electric generators. --

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MARCH 30, 2007

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Sincerely yours,

A handwritten signature in cursive script, reading "Richard N. Hill, Jr.", written in dark ink.

Richard Newton Hill, Jr.

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